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ABSTRACT

The authors report on a Methodology Conference aimed at the development of a model for the training of rehabilitation personnel employed in agencies assessing the disadvantaged. The conference was the first phase of the Disadvantaged Series of developmental conferences held at the University of Pittsburgh in 1969. Participants included 12 scientists from social, psychological, and educational disciplines. The objective of this Conference was to develop a model for the retrieval of information dealing with the successfully assessment of the socially handicapped and incorporate this into training packets. Suggested sources of information included; (1) counselors; (2) socially disadvantaged clients; (3) paraprofessionals working in the rehabilitation field; and (4) individuals in public and private agencies. A prototype training model is outlined which includes three primary subsystems;: (1) an information subsystem which includes the retrieval, validation and organization of information; (2) a developmental subsystem, including the identification of goals, the development of a plan, and evaluation; and (3) an evaluation subsystem to provide summative information useful in revising the training packet. (RWP)

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RESEARCH AND TRAINING CENTER IN VOCATIONAL REHABILITATION RT-14

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REPORT OF COMPLETED METHODOLOGY CONFERENCE
DISADVANTAGED SERIES TM9-10

Development of a Model for the Training of Rehabilitation Personnel Employed in Agencies Assessing the Disadvantaged

September 1970

Report Prepared
by

Staff, Research and Training Center
in Vocational Rehabilitation

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I. Origin of the Disadvantaged Series

A. Introduction

The Disadvantaged Series was conceived in accordance with and developed out of the current Federal priorities, which supported the Center in the selection of the vocational assessment of the socially handicapped as its Training focus. The major thrust of the Center's Training activities thus will be directed towards the development of training materials for use in the in-service Training of all levels of rehabilitation practitioners. The first phase of the Disadvantaged Series was the Methodological Conference; the second phase will be the retrieval and validation of information; and the last phase will be the packaging of that information into "Training packets" which will use whatever media that will make the presentation of information most effective. The Training packets will contain information essential for increasing the competencies of rehabilitation practitioners in their efforts to successfully assess the socially handicapped, which, as in herein defined, includes former drug addicts, public offenders, alcoholics, poor, and the disadvantaged.

B. Development

The Disadvantaged Series of developmental conferences were conceptualized with these assumptions: (1) successful rehabilitation personnel possess knowledge about assessment of the Socially Handicapped which is not available from traditional sources; (2) this information is retrievable; and (3) such information is of value for use in the development of in-service training materials.

The critical assumption is that relevant information about assessment may be retrieved and extricated from experienced rehabilitation workers. The major tasks are then to systematically retrieve such information, validate it, and organize what of it is essential into the content base from which various training materials (herein referred to as "training packets") may be developed for dissemination.

The developmental conferences for the Disadvantaged Series were designed to provide the Research and Training Center with a variety of professional thinking out of which the format for the Disadvantaged Series would evolve.

C. Assessment

Since the focus of the Center's Training activities is assessment of the Socially Handicapped, it is necessary to have a clarified definition of assessment which is at once theoretical and operational.

Vocational assessment is seen as a dynamic individualized process. Assessment for vocational rehabilitation is broadly conceived by the Center to include any form of institutional operation, interpersonal interaction, individual activity, or social process that mediates decisions that may be related to the vocational future of actual or prospective clients for rehabilitative services. The broad concept arises out of a recognition of the diverse and numerous factors that may interact in complex and largely unknown ways to affect rehabilitative processes. It includes but subsumes modes and techniques usually thought of when assessment is mentioned, such as vocational interest and aptitude inventories, work sampling techniques, psychological tests, medical examinations, and intake interviewing among others.

The definition used here goes beyond the traditional idea of assessment to include empnasis on self-assessment and social and organizational influences on the decision-making process. To the extent that this definition includes a traditional outlook, it is expert-centered; however, since the definition used here is inclusive of the client's perspective, it seeks also to be interactional and client-centered. The advantages that this enlarged definition allows will permit a more thorough retrieval of information about the client.

II. Disadvantaged Series: Methodology Conference

A. Planning

The Disadvantaged Series is divided into three phases (See Appendix A): 1. The Methodological Planning phase* which is primarily concerned with model building; 2. The Curriculum Content Development phase which is concerned with retrieval, validation and organization of information; and 3. Demonstration Training Sessions which are to provide pilot Training situations for the Center's material prior to dissemination.

1. Guidelines for Model Building

Prior to the TM9-10 conference, held in August, 1969, Dr. Leonard V. Wendland, present Director of the Research and Training Center, met with Dr. Akkanad M. Isaac, Assistant Professor of Industrial Engineering at the University of Pittsburgh. The purpose of this meeting was to ex-

*It was decided, for expediency, to combine the two methodological conferences, TM-9 and TM-10.

plore the possibilities of Dr. Isaac's participating as a consultant in the pre TM9-10 planning and in the development of a model for implementing the Disadvantaged Series. Dr. Isaac suggested that a model of an operational system is an attempt to symbolize the salient features of that system. The objective of a model then is to symbolize, systematize, describe, explain and predict systems behavior. The model also functions, though, as an aid to detecting "unidentified" parameters of the operational system, and is therefore productive of valuable insights. Such a model would consist of a variety of: (a) subsystems; (b) elements of components within subsystems; and (c) relationships within and between subsystems.

Subsequent meetings with Dr. Isaac resulted in the formulation of several procedures that we followed for the TM9-10 conference. Prior to the conference, a list of specific questions was sent to the participants so that parameters for the meeting could be established.

B. Participants of TM9-10

The Methodological Conference TM9-10 was held at Hillman Library, University of Pittsburgh. Twelve scientists from social, psychological, and educational disciplines who have had experience with informaton retrieval were selected. The conferees were chosen from the professional communities; they represented agencies and the academia. Each participant was provided with pre-conference materials which included program objectives, procedures and operational methods, and they were asked to prepare written comments to the list of questions sent to them.

A list of the participants follows:

Dr. Lloyd Bell
Assistant Vice Chancellor
Urban and Public Affairs
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Jack W. Birch, Ph.D.
Associate Dean
School of Education
University of Pittsburgh

Morris L. Cogan, Ed.D.
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J. Steele Gow, Jr., Ph.D.
Associate Provost
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Thomas A. Hart, Ph.D.
Professor
International & Development
Education Program
School of Education
University of Pittsburgh

Professor Allen Kent
Director
KAS Center
Education Library Science
in Computer Science
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Mr. John McGrath
Bureau of Employment Security
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Mr. F. Clinton McKay
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Henry Williams
Assistant Regional Representative
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C. Design

The molar objective of the Methodology Conference TM9-10 was to develop a model for the retrieval of information dealing with the successful assessment of the Socially Handicapped.

Four objectives were established:

1. To provide guidelines for the identification of individuals whose experiences would most likely be authentic and uniquely different from others, thus facilitating the retrieval of a broad sampling of potentially useful training content.

2. To provide a means for validating the relative worth and usefulness of written materials (Journal articles), responses to specific questions (i.e. interview and/or questionnaires), prepared assigned position papers or statements dealing with specific topics, and spontaneous comments elicited by group interaction and group leaders.
3. To provide a means for analyzing and organizing materials into a content base for use in the development of training materials.
4. To provide an effective means for continuously updating the content base in training programs.

Conference TM9-10 was structured to emphasize methods for the retrieval of information which could then be incorporated into "Training packets." The proceedings of the conference were tape recorded for subsequent content analysis. Dr. Wendland chaired the conference, providing periodic input to steer the cause of the meeting.

The four objectives of the conference TM9-10 were ancillary to and instrumental for the development of the information subsystem of the Center's training model. Two objectives of TM9-10, retrieval and validation, were given considerable attention and therefore will be briefly reviewed.

1. Retrieval of Information

The following sources and techniques for the retrieval of information were suggested by the participants at TM9-10:

Counselors in the bureau of Vocational Rehabilitation, private agencies and elsewhere who have functioned with varying degrees of success with socially handicapped people can be identified

and consulted. These people may not have a preconceived idea about the socially handicapped, but rather have developed competencies which they utilize in working successfully with clients. It may be possible to elicit useful information from these counselors. Counselors who have been interested in working with the disadvantaged client but with little success may be able to ask many relevant questions useful for analyzing and organizing information.

The socially disadvantaged client was suggested as another important novel source of information. The client who has been either successfully or unsuccessfully rehabilitated will be able to offer useful information relevant to the development of an authentic content base. The potential client who has not sought or refused vocational rehabilitation services may also provide meaningful data.

Simulation or role playing exercises constitutes another information retrieval technique that would bring counselors and clients together. The counselors and clients would be given specific but different objectives previous to their encounter. Following the confrontation, counselors and clients would meet separately to discuss what they felt was the other's objective during their meeting. These critiques may lead to the discovery of insightful new information.

Collection of information directly on local sites by techniques like video-tape was another retrieval technique suggested by the participants. Observers could then analyze video-tape recordings of counselors who were working with disadvantaged clients from the ghetto. The value of this approach is based on securing information from the actual environment where counselors and clients interact.

Action groups have been formed in some ghetto communities to facilitate change. These groups would be asked to help develop relevant input. The means could be made available for both the individual citizen in the community and the leaders of various community organizations to provide relevant information.

The paraprofessional who is working in the rehabilitation field would be another information source. Relevant curriculum content for training packages would be developed by interviewing these personnel. Their impressions of clients, counselors, supervisors and administrators would be excellent sources of new information.

Individuals in public and private agencies who have demonstrated expertise in their work with the socially handicapped may provide relevant input. Other sources of information will be leaders of community organizations, indigenous people who have worked in the rehabilitation field as paraprofessionals, and most important prospective clients who have previously been involved either successfully or unsuccessfully in the rehabilitation process. These people could be interviewed in small groups or individually. It might be profitable to meet these people where they work so that the investigators can gather their information with a better feel for the authenticity of the data.

Traditional sources of information retrieval may also be utilized. Written accounts of professional opinion and the recorded results of investigative research may be systematically retrieved from standard sources. These methods were not discussed by the conferees primarily because such sources do not represent innovative avenues for retrieval of information dealing specifically with the socially handicapped. The professional literature is expected to be an important source of input.

In summary, the essential function of the retrieval event is to gather information from broad and diverse sources.

2. Validation of Information

Another important component of information retrieval is that of providing a means for weighing the relative usefulness of written materials (journal articles), responses to specific questions, (i.e., interviews and/or questionnaires) prepared assigned position papers or statements dealing with specific topics, and spontaneous comments precipitated by group discussion.

It was suggested that counselors who are working in the field will be able to judge the relative pragmatic value of materials that are continuously being collected.

As was previously mentioned, the Pennsylvania Bureau of Employment Security has been developing a program to increase counselor effectiveness in dealing with the problems of the disadvantaged. The rehabilitation counselors who are presently working effectively with the disadvantaged could provide another means of validating and weighing the relative merits of retrieved information. When a number of counselors agree that a particular technique has been found to be effective, its credibility is enhanced.

The conference members suggested that during the data collection process materials may be weighted by the contributors. It would then be useful to reconvene some of the groups and individuals who have contributed to the input so that they could help the Center weigh the relative importance of the data that has been gathered.

III. A Systems Model for the Recursive Development of Training Programs

A. Introduction

Conferences to be conducted by the Center are of three general types: (1) Training conferences of a general educational nature; (2) Developmental conferences to gather new information which may result in the production of training packets or in-house publications; and (3) Demonstration conferences to field-test training packets.

Conference TM9-10 accelerated the development of the Center's training model which will form the paradigm for future conferences of the three types just mentioned. The model was primarily developed to be the vehicle for completion of the "Disadvantaged Series" (See Appendix A). The Center's training model is identified as: A Systems Model for the Recursive Development of Training Programs. (See Appendix B.) A description of the training model is presented to enable the reader to better understand the structure and method to be used by the Center in its conduct of conferences.

The present planning for years 1971 and 1972 assumes the completion of the "Disadvantaged Series," provided that the focus on the socially handicapped population remains the major emphasis of the Center's training activities.

B. Description of a Systems Training Model

A major goal of the Center is the development of training packets intended to increase the assessment skills of rehabilitation personnel in their work with the socially handicapped. In meeting the special requirements of this objective, a prototype Systems Training Model has been formulated. This model serves as a guide to the Research and Training Center in the execution of its training goal.

The model combines the development of training content with the design of training packets. The word "systems" connotes the importance of coordinating all parts of the developmental process in accomplishing the Center's training goal. An important feature of this model is the self-correcting mechanism which controls the quality of the output for each subsystem of the model. In this way, the training model is recursive in design; that is, the main activity of each subsystem of the model is continuously updated, refined, and revised as feedback data becomes available.

The Systems Training Model is presently conceptualized as consisting of three primary subsystems: (1) Information Subsystem, (2) Developmental Subsystem, and (3) Evaluation Subsystem. The Information Subsystem gathers relevant information from various information sources. The collected information is validated and organized to form a content base. The Developmental Subsystem has the specific function of processing information from the content base. The content base is the enabling base for the production of training packets. The Evaluation Subsystem enables the developer of the training packet to obtain data useful for determining the completeness and value of the training packet. The reader's attention is directed toward a brief characterization of the three subsystems of the Systems Training Model.

Information Subsystem

The Information Subsystem of the Systems Training Model had its origin in the results of the TM9-10 conference of the "Disadvantaged Series."

The Information Subsystem of the Systems Training Model consists of three functional components. These components retrieve, validate and or-

ganize information forming the content base. The content base is comprised of a systematic body of knowledge and skills required for minimal counselor competency. Expert judgment is the method used to filter content, both at the point where the information is received and at a later time determining if it has become obsolete.

Retrieval of Information. The retrieval component of the Information Subsystem relies both on traditional and new sources and techniques for gathering relevant content for use in the development of training packecs. Written accounts of professional opinion and the recorded results of investigative research may be systematically retreived from standard sources of information.

In addition to orthodox sources, new inputs to the content base may be used. Special techniques are required to elicit relevant information from numerous authentic and indigenous sources. Vocational rehabilitation personnel who are presently working with socially handicapped clients in both public and private agencies are in an ideal position to make significant inputs to the content base. Another source of input is the community action groups that have been formed to facilitate change in their communities. "Grass-roots" workers provide valuable sources of input mainly because of their close relationships with and "intuitive" understanding of the socially handicapped individuals. Clients represent another potential source of novel input. The reports of both successful and unsuccessful client encounters with the rehabilitation establishment provide valuable content input. Along with this group, the contributions of indivuals who have not been involved in rehabilitation and yet may be eligible for services are also considered important sources of information. The strategy of meeting with people in their home environ-

ments, in groups and individually, could result in the acquisition of a body of relevant unique information. From these sources it is expected that a content base will be formulated which will ppovide the basis for the development of training packets and will result in the conduct of effective training programs.

Validation of Information: The validation component of the Information subsystem functions in a unique way. Unlike libraries which make little attempt to validate information, the validation component filters retrieved information by accepting only useful, worthwhile and reliable content.

The validation process depends largely on concurrent agreement among professional and non-professional personnel in vocational rehabilitation. If a considerable consensus is obtained for a given training item, then that item is deemed worthy of inclusion in the content base from which training packets are designed. A training item of information is the smallest competency-based unit amenable for training purposes. A training item may be viewed as an essential skill or relevant concept. The compilation of these training items forms the content base.

Organization of Information: The function of the organization component of the Information Subsystem is to provide a systematic body of knowledge known as the content base. A determination of the sequential organization of training items is made. A training item roughly corresponds to an essential skill, mastery of which is required by the trainee for minimal competency. Various scaling techniques combined with judgments are the primary methods employed for sequencing training items of information.

For each training item a training objective is prepared. Objectives are clustered to correspond to functions which comprise the various professional roles of the trainees: for example, the counselor's role as test interpreter is a major role requiring mastery of many training items. The counselor's competency as test interpreter is improved as specific individually prescribed training objectives are acheived. The ordering process facilitates the construction of both short and long term training packets. Individualized use of competency-based training packets (CBTP) provides on an individually prescribed basis training programs at the user level.

Updating of Information: An important quality control measure imposed on the Information Subsystem is the updating event. This event is charged with the function of keeping the content base relevant. As the roles and functions of those to be trained change, the training items in the content base will need to be modified. Since much of the content base deals with training items of an exact nature, the value and worth of these training items will be largely dependent upon evaluative data received from the field. Also, in the design process where training items are synthesized into training packets, formative evaluative data provide content and necessary validity checks on the many training items in the content base. Thus, the content base remains a source of relevant training items.

Developmental Subsystem

The content base, an organized body of specialized knowledge, when subjected to the design process of the Systems Training Model results in the construction of training packets reflecting sound principles of training and learning. The Developmental Subsystem of the Systems Training

Model consists of two components. (1) Identification of goals and (2) Development of a plan. The soundness of the products of these components is continuously evaluated in their developmental stages by a process known as formative evaluation. These products are synthesized to formulate training packets. The term "Developmental Subsystem" used here is intended to mean a system which affects the delivery of a usable product. It is the design process of the training model. Its function is to generate, from the content base, appropriate training packets. These training packets are designed to become important training resources for user agencies.

Identification of Goals: The products of the component of this Developmental Subsystem are written to correspond to training items in the content base. Each goal is written so that its acheivement by the trainee is observable. Goals are sequenced and differentiated according to degrees of competency required for the various roles and functions which the trainee assumes and performs as a practicing professional. Goals represent what the trainee will be able to do, or the knowledge he will possess, after having mastered the training packet. Goals also tell what the user can look for as evidences of success after the training packet has been implemented. Finally, goals are sequenced to enable the user to employ only those which are deemed usable for a partular training purpose.

Development of a Plan: The training packet involves a variety of materials and procedures. This necessitates a detailed plan involving multiple documents. A complex training packet is delineated in a variety of outlines and manuals of procedures. The plan tells what must be done to accomplish specific goals. Very little planning is left to on-the

scene development and decision once the training packet is utilized. All elements and subelements of the training packet are preplanned in great detail. Detailed plans aid in the analysis of all aspects of the training packet and the identification of prospective weak spots. Plans are written so that the user of the training packet will easily understand and be able to put it into operation without assistance.

Formative Evaluation: The development of a plan mentioned above includes a description of how each goal in the plan will look when the training packet is actually implemented. Each goal is tied to a specific description of its operation in the plan. This description serves as the basis for the formative evaluation of the training packet. Formative evaluation is the act of considering the effectiveness of the plan before and during field testing of a training packet before dissemination to user agencies. The formative evaluation component of the Developmental Subsystem is the mechanism whereby the successful design of a training packet is assured. The goals of a training packet are checked against the plan to ascertain that there exists a logical and sensible expectation for the successful use of the training packet.

Evaluation Subsystem

The final subsystem of the Systems Training Model is the Evaluation Subsystem. The Evaluation Subsystem provides summative information useful in revising the training packet. Summative evaluation is an attempt to measure the usefulness and worth of the training packet as viewed from the user's perspective. Solicited feedback is subjected to summative evaluation which gives the necessary guidance for determining the nature of revisions to the training packet. The revision process modifies the

training packet to reflect the input of recent summative data as it becomes available from the user agencies in the field.

Summary

The Systems Training Model just described integrates both Information and Developmental Subsystems in order to facilitate the construction of competency-based training packets in order to increase the skills and knowledge of trainees. The purpose of the Information Subsystem is to generate training content from various informational resources. The Developmental Subsystem is unique in that it provides training packets which are adaptable to individual, small and large group use. It must be remembered, however, that the feasibility, not to mention the worth, of packaging cognitive and affective experiences for use as training content remains largely untested. The Systems Training Model provides the structure for testing the feasibility of providing innovative and effective training packets. The Evaluation Subsystem characterizes the recursive nature of the Systems Training Model. It is the mechanism which should assure effective training packets.

APPENDICES

Summary of Proposed Developmental Conferences

DISADVANTAGED SERIES

Methodology Planning	Curriculum Content Development	Demonstration Training Session
TM9-10 Disadvantaged Series Model Planning Meeting*	→ TC-11, Disadvantaged Series Curriculum Content Meeting: Counselors	→ TD-17 Disadvantaged Series Counselor Training Session
	→ TC-12, Disadvantaged Series Curriculum Content Meeting: Supervisors	→ TD-18 Disadvantaged Series Supervisors Training Session
	→ TC-13, Disadvantaged Series Curriculum Content Meeting: Administrators	→ TD-19 Disadvantaged Series Administrators Training Session
	→ TC-14 Disadvantaged Series Curriculum Content Meeting: Work Evaluation	→ TD-20 Disadvantaged Series Evaluators Training Session
	→ TC-15 Disadvantaged Series Curriculum Content Meeting: Psychologists concerned with evaluation	→ TD-21 Disadvantaged Series Psychologists Training Skssion
*Conducted: August 19,20, 1969	→ TC-16 Disadvantaged Series Integrating Disadvantaged Clients Into Existing Rehabilitation Facilities; Administrators, directors of client service, psychologists and social workers	

Note: Specific steps in conducting this model are identified by letter-number code; e.g., TM9-10 stands for Training-Methodology, Project Number 10, TC stands for Training-Curriculum, TD stands for Training-Demonstration.

A Systems Model
for the
Recursive Development of Training Programs